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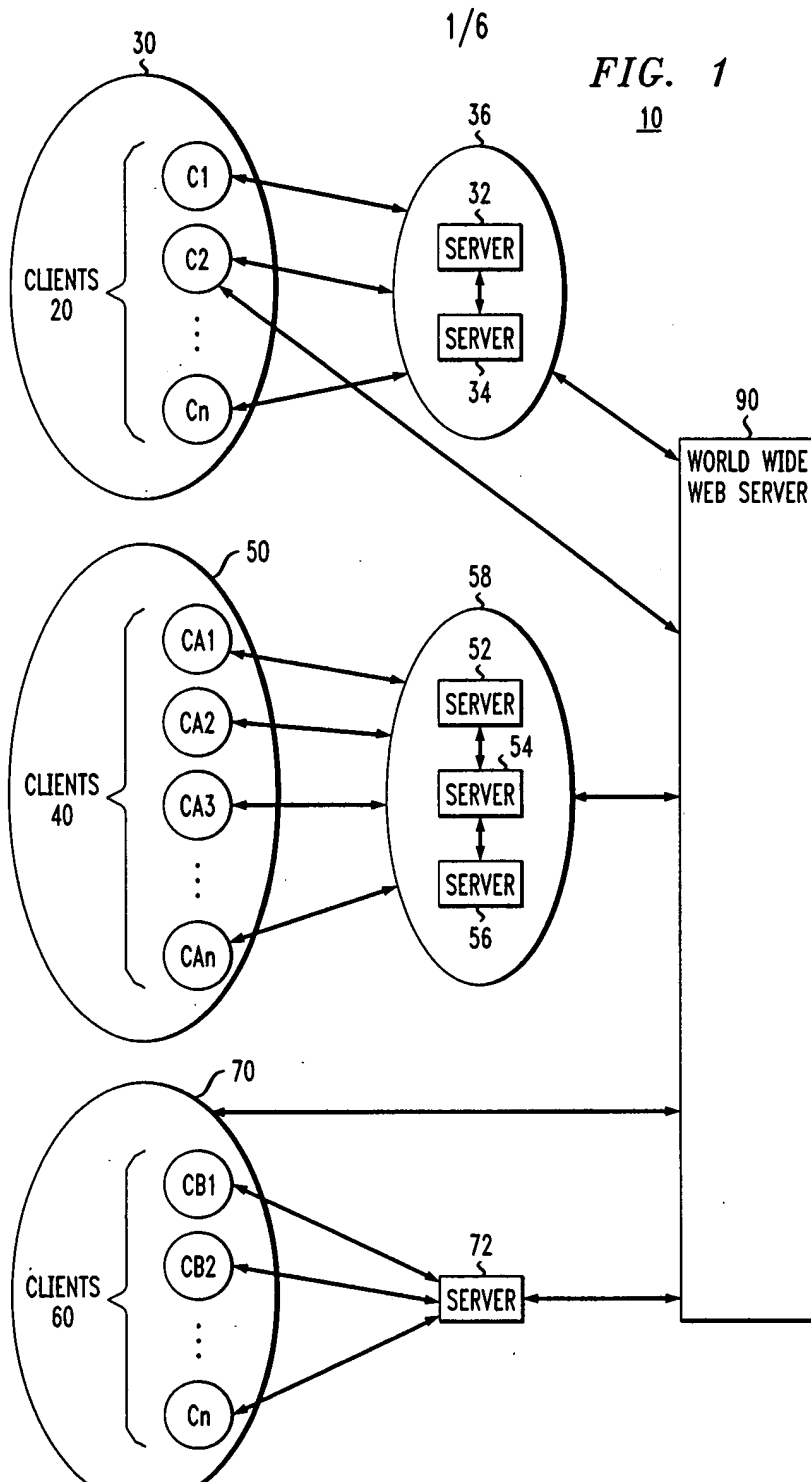
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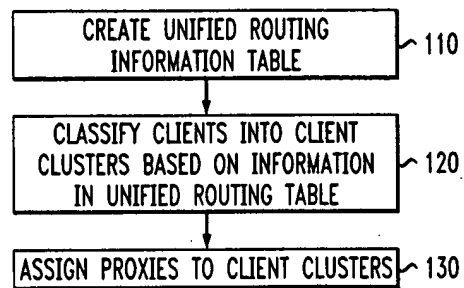
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FIG. 1
10



2/6

FIG. 2*FIG. 3*160

ROUTES		AS PATH
134.87.2.0/24	BCnet	6509 271
134.117.0.0	CARLETON UNIVERSITY	6509 10786
137.82.0.0	UNIVERSITY OF BRITISH COLUMBIA	6509 271
137.122.0.0	UNIVERSITY OF OTTAWA	6509 10786

{ 170 { 180 { 190

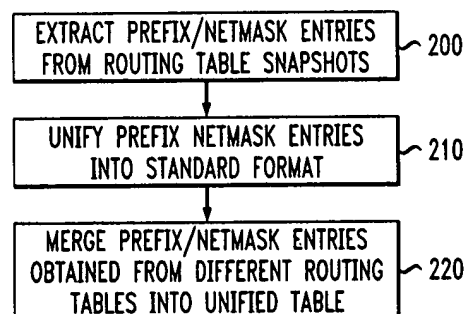
FIG. 4

FIG. 5

3/6

	230	240	250
FORMATS	x1.x2.x3.x4/k.1k.2k.3k.4	x1.x2.x3.x4/1	x1.x2.x3.0
ROUTING TABLES	MAE-EAST MAE-WEST PACBELL PAIX	ARIN AT&T CANET NLNR VBNS	CANET
EXAMPLES	193.1/255.255 193.0.128/255.255.192	128.148.0.0/16	130.15.0.0
UNIFICATION	193.1/255.255 193.0.128/255.255.192	128.148.0.0/255.255	130.15.0.0/255.255 197.75.72/255.255.255

FIG. 6

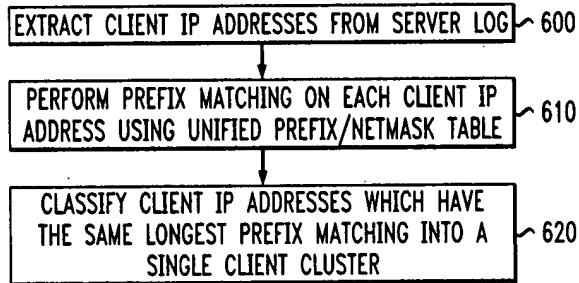


FIG. 7

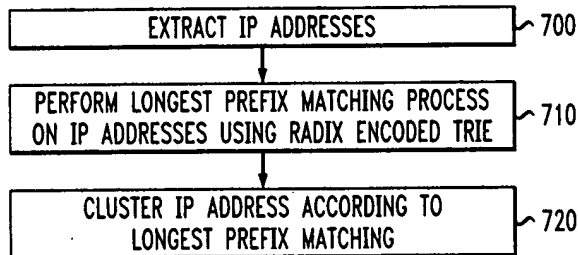
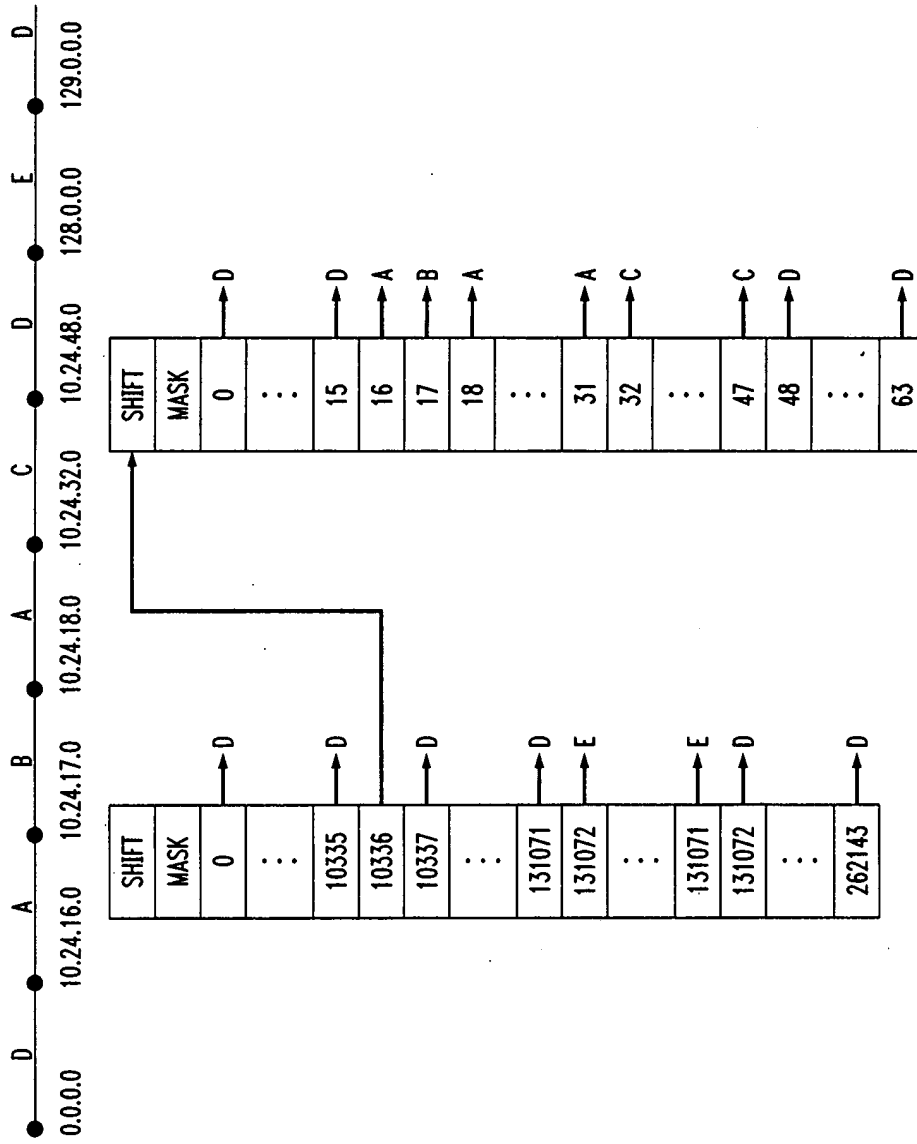


FIG. 8



5/6

FIG. 9a

matching code for the <S, R, H> values generated by the first part of the algorithm

```

/*
 * multi-level retrieve longest prefix match
 *
 * input arguments:
 *
 *   S   top level shift
 *   R   retrieve internal nodes
 *   H   retrieve leaf nodes (next hop index)
 *   addr IP address to match
 *
 * return:
 *
 *   0   no match
 *   >0  next hop index
 */

int
lpmatch (uint8 S, uint32* R, uint8* H, uint32 addr)
{
    uint32    b;
    uint32    x;

    x = R [addr >> S];
    while (b = >> 27)
    {
        b = (x & ((1<<26) -1)) + ((addr>>(S-b)) & (1<<b) -1));
        if (x & (1<<26))
        {
            x = H[b];
            break;
        }
        x = R[b];
    }
    return x;
}

```

6/6

FIG. 9b

```

/*
 * 2-level retrie longest prefix match
 *
 * input arguments:
 *
 *   S    top level shift
 *   R    retrie internal nodes
 *   H    retrie leaf nodes (next hop index)
 *   addr  IP address to match
 *
 * return:
 *
 *   0    no match
 *   >0   next hop index
 */

int
lpmatch (uint8 S, uint32* R, uint8* H, uint32 addr)
{
    uint32    x;

    x = R [addr >> S];
    return H[(x & ((1<<26)-1)) + ((addr & ((1<<S) -1)) >> (S - (x>>27)))]];
}

```